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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,373	08/26/2003	Tomoo Murata	501.43011X00	1914

20457 7590 03/01/2006

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EXAMINER	
QUINTO, KEVIN V	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/647,373	MURATA ET AL.	
	Examiner	Art Unit	
	Kevin Quinto	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *25* is/are allowed.

6)☒ Claim(s) *1,2,4-6,8,10-12,16,18,21,24,26,27,29,30,33 and 35-39* is/are rejected.

7)☒ Claim(s) *3, 7, 9, 13-15, 17, 19, 20, 22, 23, 28, 31, 32, 34, and 40-46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Minhloan Tran
Primary Examiner
Art Unit 2826

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed October 20, 2005 with regard to claims 1-24, 26, 27, 29, and 30-46 have been fully considered but they are not persuasive. The applicant states that the Ema reference (USPN 5,014,104) fails to disclose that the projecting portion of the wiring under a connection (p. 16 of the applicant's response). The examiner respectfully disagrees since figure 3(a) of Ema clearly shows that this is the case. The word "under" has been interpreted in its broadest sense; that is, an object under another object may be partially under it. Therefore the rejection using the Ema reference stands.

2. The examiner notes the newly amended title and therefore hereby withdraws the objection made to the specification in the previous Office action.

3. The examiner notes newly amended claim 13 and therefore hereby withdraws the objection made to claims 13-23 in the previous Office action.

4. The examiner notes newly amended claims 8, 19, and 33 and therefore hereby withdraws the rejection of claims 8, 19, 21, and 33 under 35 U.S.C. 112, second paragraph which was made in the previous Office action

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 16, 18, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 16 is dependent upon itself. The examiner is unable to determine the metes and bounds of claim 16 and its dependent claims 18 and 21 since the dependency is not clearly stated.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 4-6, 8, 10-12, 24, 26, 27, 29, 30, 33, and 35-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Ema (USPN 5,014,104).

10. In reference to claim 1, Ema (USPN 5,014,104) discloses a similar method of fabrication. Figure 3(a) of Ema discloses a semiconductor device with a first wiring (G1 or G2) extending in a first direction and having at least one projecting portion. A second wiring (N11 or N21) is connected to the first wiring (G1, G2 respectively) through a first connection and extends in a second direction orthogonal to the first direction. The second wiring (N11 or N21) has a surplus portion projecting from the connection in a direction opposite to the second direction. The first wiring (G1 or G2) and the second wiring (N11 or N21) are arranged such that the center of the connection is offset in the

second direction from a center of the first wiring (G1 or G2) and a projecting portion of the first wiring (G1 or G2) is formed under the connection. The fabrication process for the device of figure 3(a) inherently meets the claimed method.

11. With regard to claim 2, Ema (USPN 5,014,104) discloses a similar method of fabrication. Figure 3(a) of Ema discloses a semiconductor device with a first wiring (G1) and a second wiring (G2) extending in a first direction which are adjacent to each other. A third wiring (N11) is connected to the first wiring (G1) through a first connection and extends in a second direction opposite to the second wiring (G2) and along a line orthogonal to the first direction. The third wiring (N11) has a first surplus projection projecting in the direction of the second wiring (G2) from the first connection. A fourth wiring (N21) is connected to the second wiring (G2) through a second connection and extends along the line in a direction opposite to the first wiring (G1). The fourth wiring (N21) has a second surplus projection projecting in the direction of the first wiring (G1) from the second connection. The first (G1), second (G2), third (N11), and fourth (N21) wirings are arranged such that the center of the second connection is offset in a direction opposite to the first wiring (G1) from a center of the second wiring (G2). The second wiring (G2) has a projecting portion formed under the second connection. The fabrication process for the device of figure 3(a) inherently meets the claimed method.

12. In reference to claim 4, a fifth wiring (Vcc2 or Vss2) is formed in parallel with the third wiring (N11).

13. With regard to claim 5, the distance between the third wiring (N11) and the fifth wiring (Vcc2 or Vss2) is smaller than the distance between the first (G1) and second (G2) wirings.

14. In reference to claim 6, the distance between the first (G1) and the second (G2) wirings is larger than a minimum machining size.

15. In reference to claim 8, the width of each of the first (G1) and the second (G2) wirings and the width of each of the first and second connections are substantially equal to each other.

16. With regard to claim 10, a MISFET underlies the first (G1) and second (G2) wirings. The second wiring (G2) is connected to a drain (Dp or Dn) of a MISFET.

17. With regard to claim 11, a center of the first connection is disposed on a center of the first wiring (G1).

18. In reference to claim 12, the first connection is formed so that a center is offset from a center of the first wiring (G1) in a direction opposite to the second wiring (G2). The first wiring (G1) has a projecting portion formed under the first connection.

19. In reference to claim 24, Ema (USPN 5,014,104) discloses a similar method of fabrication. Figure 3(a) of Ema discloses a semiconductor device with a first wiring (G1 or G2) extending in a first direction. There is a connection on the first wiring (G1 or G2). A terminal (N11 or N21) on the connection extends in a second direction orthogonal to the first direction. The terminal (N11 or N21) has a surplus portion projecting from the connection in a direction opposite to the second direction. A second wiring (N11 or N21) extends in the second direction from the terminal (N11 or N21). The first wiring

(G1 or G2) includes a projecting portion disposed under the connection. The fabrication process for the device of figure 3(a) inherently meets the claimed method.

20. In reference to claim 26, Ema (USPN 5,014,104) discloses a similar device. Figure 3(a) of Ema discloses a semiconductor device with a first wiring (G1 or G2) extending in a first direction and having at least one projecting portion. A second wiring (N11 or N21) is connected to the first wiring (G1, G2 respectively) through a first connection and extends in a second direction orthogonal to the first direction. The second wiring (N11 or N21) has a surplus portion projecting from the connection in a direction opposite to the second direction. The connection is formed so that a center is offset in the second direction from a center of the first wiring (G1 or G2). The first wiring (G1 or G2) has a projecting portion formed under the connection.

21. With regard to claim 27, Ema (USPN 5,014,104) discloses a similar device. Figure 3(a) of Ema discloses a semiconductor device with a first wiring (G1) and a second wiring (G2) extending in a first direction which are adjacent to each other. A third wiring (N11) is connected to the first wiring (G1) through a first connection and extends in a second direction orthogonal to the first direction and in opposition to the second wiring (G2). The third wiring (N11) has a first surplus projection projecting in the direction of the second wiring (G2) from the first connection. A fourth wiring (N21) is connected to the second wiring (G2) through a second connection and extends in a second direction orthogonal to the first direction and in opposition to the first wiring (G1). The fourth wiring (N21) has a second surplus projection projecting in the direction of the first wiring (G1) from the second connection. The second connection is formed so that

a center is offset from a center of the second wiring (G2) in a direction opposite to the first wiring (G1). The second wiring (G2) has a projecting portion formed under the second connection.

22. In reference to claim 29, a fifth wiring (Vcc2 or Vss2) is formed in parallel with the third wiring (N11).

23. With regard to claim 30, the distance between the third wiring (N11) and the fifth wiring (Vcc2 or Vss2) is smaller than the distance between the first (G1) and second (G2) wirings.

24. In reference to claim 33, the width of each of the first (G1) and the second (G2) wirings and the width of each of the first and second connections are substantially equal to each other.

25. With regard to claim 35, the second wiring (G2) is connected to a drain (Dp or Dn) of a MISFET.

26. With regard to claim 36, a center of the first connection is disposed on a center of the first wiring (G1).

27. In reference to claim 37, the first connection is formed so that a center is offset from a center of the first wiring (G1) in a direction opposite to the second wiring (G2). The first wiring (G1) has a projecting portion formed under the first connection.

28. In reference to claim 38, Ema (USPN 5,014,104) discloses a similar device. Figure 3(a) of Ema discloses a semiconductor device with a first wiring (G1 or G2) extending in a first direction and having at least one projecting portion. A second wiring (N11 or N21) is connected to the first wiring (G1, G2 respectively) through a first

connection and extending from the first connection in a second direction orthogonal to the first direction. The second wiring has a first surplus portion projecting from the first connection in a direction opposite to the second direction. The first connection is formed on the first wiring (G1 or G2) and its projecting portion.

29. In reference to claim 39, Ema (USPN 5,014,104) discloses a similar device. Figure 3(a) of Ema discloses a semiconductor device with a first wiring (Vcc2 or Vss2) extending in a first direction and having at least one projecting portion. A second wiring (10 or 12 or 13) is connected to the first wiring (Vcc2 or Vss2) through a first connection and extends from the first connection in a second direction orthogonal to the first direction. The second wiring (10 or 12 or 13) has a first surplus portion projecting from the first connection in a direction opposite to the second direction. A third wiring (10 or 12 or 13) is connected to the first wiring (Vcc2 or Vss2) through a second connection and extends from the first connection in a second direction orthogonal to the first direction. The third wiring (10 or 12 or 13) has a second surplus portion projecting from the second connection in a direction opposite to the second direction. The first connection is formed on the first wiring (Vcc2 or Vss2) and its projecting portion while the second connection is formed on the first wiring (Vcc2 or Vss2) and its projecting portion.

Allowable Subject Matter

30. Claim 25 is allowed.

31. Claims 3, 7, 9, 13-15, 17, 19, 20, 22, 23, 28, 31, 32, 34, and 40-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

32. The following is a statement of reasons for the indication of allowable subject matter: the examiner is unaware of any prior art which suggests or renders obvious a method for fabricating a semiconductor device having a first wiring and a second wiring which has a connection between overlapping areas of the two wiring layers such that the connection is disposed only under a projecting portion of the first wiring.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (571) 272-1920. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KVQ